

Kansas, Missouri, New York, North Carolina, Oklahoma, Pennsylvania, South Dakota, and Utah. 30th, Colorado, Connecticut, Florida, Georgia, Illinois, Indian Territory, Kentucky, Maryland, Mississippi, Missouri, Nevada, New Jersey, New Mexico, Oklahoma, Tennessee, Utah, Virginia, and West Virginia.

WINDS.

The prevailing winds for June, 1892, are shown on Chart II by arrows flying with the wind. In New England and the middle Atlantic states south to southwest winds were most frequently noted; in the south Atlantic and east Gulf states, the Ohio Valley and Tennessee, the upper Mississippi valley, the middle-eastern slope of the Rocky Mountains, and the middle plateau region they were generally from southeast to southwest; in the west Gulf states and the Missouri Valley, from east to south; over the Florida Peninsula, from the southeast; in the lower lake region, from south to west; in the upper lake region and on the northeast slope of the Rocky Mountains, from northeast to southeast; in the extreme northwest, from north to northeast; on the southeast slope of the Rocky Mountains, from southeast to south; over the southern and northern plateau regions and on the north Pacific coast, from southwest to northwest; on the middle Pacific coast, in the Sacramento Valley, from the southeast, and on the coast, from west to north; and on the south Pacific coast, from west to northwest.

HIGH WINDS.

[In miles per hour.]

Wind velocities of 50 miles, or more, per hour were reported at regular stations of the Weather Bureau as follows: 3d, 56, se., at Amarillo, Tex. 4th, 50, se., at Dodge City, Kans. 6th, 52, nw., at Memphis, Tenn. 9th, 54, s., at Pierre, S. Dak.; 50, sw., at Huron, S. Dak. 10th, 50, s., at Amarillo, Tex.; 56, e., at Bismarck, N. Dak. 13th, 72, nw., at Chicago, Ill. 14th, 60, s., at North Platte, Nebr. 15th, 51, se., at Dodge City, Kans.; 64, sw., at Kearney, Nebr. 16th, 52, s., at Amarillo, Tex. 20th, 51, sw., at Woods Holl, Mass. 22d, 52, nw., at Chicago, Ill. 23d, 51, nw., at Cleveland, Ohio. 28th, 50, sw., at Kitty Hawk and Southport, N. C. 29th, 54, s., at Amarillo, Tex.

LOCAL STORMS.

1st.—At Rochester, N. Y., a thunderstorm was observed in the evening; at Charlotte, N. Y., a house was struck by lightning and burned. At Erie, Pa., several houses were struck by lightning, streams overflowed, and cellars were flooded. A destructive storm was reported in the eastern part of Cabell county, W. Va., in the afternoon. A thunder, wind, and rain storm caused considerable damage in northern Ohio. At Bristol, Ohio, one person was killed by lightning. At Wauseon, Ohio, 0.80 inch of rain fell in 15 minutes, trees were blown down, and a heavy hailstorm was reported east of that place. At University, Miss., a thunderstorm, with high wind and rain, began at 4 p. m. and lasted 40 minutes; 1.00 inch of rain was recorded, hail fell for 10 minutes, and some damage was caused by wind. Severe thunderstorms were reported in other portions of Mississippi. A destructive storm was reported at Belcherville, Tex., at night. An exceptionally heavy rainstorm occurred in the afternoon at Amana, Iowa.

2d.—At Gilbertville, Mass., a house was struck and one man was killed by lightning. A thunderstorm, with heavy rain, was reported at Albany, N. Y., in the afternoon. At Addison, N. Y., a number of buildings were struck and several persons were injured by lightning. A house was struck by lightning at Corning, N. Y. Near South Canisteo, N. Y., a number of sheep were killed and a man was badly injured by lightning. A heavy thunderstorm visited Lackawanna county, Pa., at night. One person was reported killed by lightning near Lumberton, N. C. Severe thunder and rain storms were reported in the afternoon at Columbus, Springfield, Massillon, and near Sandusky, Ohio. Exceptionally heavy rain fell in

southeast Lower Michigan. At Detroit, Mich., great damage was caused to property by flooded streets and sewers.

3d.—Heavy rain and thunderstorms were reported in eastern Pennsylvania. At Hardeeville, S. C., four men were reported killed by lightning. Heavy thunderstorms were reported in Hall and Rutledge counties, Ala.

4th.—A severe thunder, rain, and hail storm occurred at Tampa, Fla., in the evening. McCook, Nebr., was visited by a destructive storm in the afternoon. At Concordia, Kans., a house was struck by lightning. Exceptionally heavy rain fell in Pennsylvania. At Columbus, Pa., 5.36 inches fell in seven hours. At Spartansburgh, Pa., the rainfall exceeded 10.00 inches, and was reported the heaviest noted in that section in 50 years. At Cumberland, Md., 4.64 inches of rain fell from 2.15 to 3.15 p. m.; the west end of the town was partly flooded and much damage was caused to gardens, etc. At Toledo, Ohio, heavy rain fell at intervals, causing some damage, and damage was caused by lightning and high wind.

5th.—At Rochester, N. Y., 5 houses were struck, and one person was severely injured, by lightning. At Alfred Centre, N. Y., a heavy rainstorm caused damage to crops, etc. Very heavy rains caused washouts on railroads near Rapid City, S. Dak. A tornado moving southeast was reported at Cleburne, Tex., at 8 p. m.; 2 persons were injured and buildings were destroyed to the value of about \$8,000.

6th.—Heavy wind and rain storms were reported in east-central Virginia in the afternoon. At Asheville, N. C., a man was killed by lightning. A house was struck by lightning at Dixon, Ill., in the morning. At Williamsville, Ill., one person and 2 horses were killed by lightning. A violent thunderstorm, with heavy rain, occurred in the afternoon at Memphis, Tenn.; 1.56 inch of rain fell in 50 minutes, and the temperature fell from 86° to 67°. At La Crosse, Wis., 2 buildings were struck and one person was shocked by lightning. A heavy rain caused damage in bottom lands about Hillsborough, Wis. A house was struck and one person was injured by lightning near Valley Junction, Wis. A cloudburst was reported at Swingle, Iowa; railroad tracks and bridges, light buildings, and stock were washed away. A destructive storm was reported south of Elkton, S. Dak. A violent thunder and rain storm was reported in the evening at Dallas, Tex.

7th.—At Oak Park, Va., a man and several horses were reported killed by lightning. During a heavy thunderstorm in the afternoon at Cleveland, Ohio, one building was struck, a horse killed, and one man stunned by lightning. A thunderstorm, with exceptionally heavy rain, visited Cincinnati, Ohio, in the morning. Street traffic was suspended for about one-half hour and serious damage was done to streets. In the suburbs heavy rain was attended by hail, which destroyed garden vegetation. Thunderstorms were general over Ohio. At Bloomdale, Ohio, one man was killed and two barns were struck by lightning.

At Findlay, Ohio, 5 buildings and an oil tank were struck by lightning. At Oberlin, Ohio, the rainfall was very heavy and hail was reported. Several buildings were struck by lightning, and one person was killed at Ellsworth, Ohio. One person was killed by lightning at Martinsville, Ill. A heavy wind, rain, and hail storm visited Bowen, Ill., in the afternoon. At Rockford, Ill., several buildings were struck by lightning, basements were flooded by heavy rain, and washouts occurred on railroads. At Davenport, Iowa, a thunderstorm, with heavy rain and some hail, occurred in the afternoon.

At Dubuque, Iowa, heavy rain flooded streets, sewers, and

cellars. In the surrounding country bridges were carried away and much damage was caused to crops. At Saint Louis, Mo., a thunderstorm, with high wind and heavy rain, occurred in the afternoon. At Harvey, Wis., 2 barns were struck by lightning. About 4 p. m., a heavy hail and wind storm passed over the northwest part of Winston county, Miss., causing great damage to timber and crops. Heavy rain caused damage about McKeesport, Pa. At Asheville, N. C., a severe rain and hail storm occurred about noon.

8th.—A heavy thunder and hail storm was reported near Wytheville, Va. A succession of thunderstorms passed over Ohio. The first one entered the state about 6 a. m., attended by heavy rain. The succeeding storms were less intense. Some damage was reported by washouts. One person was reported killed by lightning near Collinsville, Ill. At Springfield, Mo., a thunderstorm from the north began 1.25 p. m. Heavy rain began 1.40 p. m., and hail at 1.55 p. m. Some damage was caused by hail. The temperature fell 22°.

A thunderstorm, with heavy rain and hail, visited Lead Hill, Ark. During a thunderstorm in the early morning at Milwaukee, Wis., 2 houses were struck and one person was stunned by lightning. Severe thunderstorms were reported in other parts of Wisconsin. A hailstorm damaged grain near Wentworth, S. Dak. At Fort Du Chesne, Utah, a building was unroofed by a small whirlwind which lasted 3 minutes. At Oleta, Cal., a number of sheep were killed by lightning. A destructive cloudburst was reported near Hopkinsville, Ky.

9th.—A thunderstorm, with heavy rain, caused considerable damage at Buffalo, N. Y. At Moscow, Pa., a thunderstorm and cloudburst occurred at 4.30 p. m., swelling streams to a dangerous height. Heavy rain caused landslides and washouts on the Hudson River Railroad. Destructive rain and hail storms were reported in Loudoun county, Va. Light thunderstorms were reported in several sections of Ohio. Some damage was caused to trees and houses at Cumberland, Wis., during a thunder, wind, and rain storm in the evening.

10th.—A heavy wind and rain storm prevailed over southern Florida. At Jupiter, Fla., rain, with high northeast winds, continued during the 10th and 11th; trees were uprooted and much damage was caused to crops. At Dublin, Ga., a man was killed by lightning. A heavy thunderstorm visited Bismarck, N. Dak.; rain flooded streets and cellars, and heavy hail fell for 3 minutes. At Gallatin, N. Dak., considerable damage was caused to crops by heavy rain and hail. At Miles City, Mont., a house was struck and one person was stunned by lightning. Heavy rain on the 10th and 11th caused considerable damage at Helena, Mont.; small streams overflowed their banks and telegraph poles were washed out. A violent thunderstorm occurred at Salt Lake City, Utah, in the afternoon; lightning struck in several places, small hail fell to a considerable depth, and snow and sleet were noted on neighboring mountain peaks.

11th.—At Humboldt, Minn., a building was struck by lightning. A severe rain and hail storm at night caused some damage at Maple Plain, Minn. In the early morning a number of buildings were demolished by a storm at Churchs Ferry, N. Dak. At Cando, N. Dak., several persons were injured and a number of houses were blown down.

12th.—In the early morning several buildings were struck by lightning at Newark, N. J. A man was reported killed by lightning at Soque, Ga. At 10.40 a. m. a whirlwind occurred at Sault de Ste Marie, Mich.; the river fell to 12.8 feet and then rose rapidly. A heavy wind and thunder storm in the evening at Shell Lake, Wis., prostrated trees and damaged roofs. A heavy rain and hail storm moved east near Orono Point, Minn., at 7.30 p. m. Trees were torn up in a path about 600 feet in width. Heavy rain and hail storms were reported in Iowa in the afternoon and evening. A destructive hail storm moved northeast near Alta, Iowa, about 10 p. m., causing great damage to crops. A destructive hailstorm was reported near Arkalon, Kans. Hail destroyed crops near Frankfort, Nebr. A thunderstorm, with heavy rain and hail,

occurred at Baker City, Oregon, at night. A severe storm at Cleburne, Tex., destroyed 42 houses and fatally injured 2 persons.

13th.—At Patten, Me., a severe thunderstorm moved east-southeast at 11 p. m.; heavy rain fell after the passage of the storm; several buildings were unroofed and twisted. At Benedicta, Me., a heavy thunderstorm moved east at 11.30 p. m. A severe storm was reported at Joliet, Ill. At Galva, Ill., an exceptionally severe thunder, rain, and hail storm moved east at 7.45 p. m. One person was killed, 24 were injured, and great destruction was caused to buildings and railroad property.

At Rockford, Ill., a thunder and rain storm moved southeast at 7 p. m., prostrating trees. At Chicago, Ill., a heavy thunder, rain, and hail storm moved northeast about 4 p. m., causing damage to buildings in different parts of the city. Five persons were reported killed, and 3 persons were drowned by the capsizing of a boat. A heavy thunder, rain, and hail storm moved southeast over Sandwich, Ill., in the evening, damaging trees and buildings. At Riley, Ill., a strong northwest gale was reported in the evening.

A heavy thunder and hail storm visited Hammond, Ind., from 10 to 11.30 p. m., damaging buildings to the extent of about \$5,000. Considerable damage was caused at Michigan City, Ind. At Grand Haven, Mich., a thunderstorm, with heavy showers, occurred at night; lightning struck in several places. Near Harvey, Wis., a barn was struck by lightning and three men were injured. During an unusually severe thunderstorm in the evening at Davenport, Iowa, lightning struck in several places.

At Dubuque, Iowa, trees were blown down during a thunderstorm. At Farley, Iowa, a thunder, rain, and hail storm moved southeast at 5.30 p. m. At Earling, Iowa, a cloudburst, with hail, thunder, and lightning, occurred at 1 p. m. About \$3,000 damage was caused by a hailstorm that moved southeast over Nichols, Iowa, at 5 p. m. A destructive hailstorm was reported near Oregon, Mo. High wind and hail caused damage to fruit and crops about Doniphan, Nebr.

14th.—Destructive storms occurred in Maine. A thunder, rain, and hail storm moved east over Farmington, Me., at 4 p. m. At Stillwater, Me., a storm moved northeast in a path about 200 rods in width at 4 p. m. At Eastport, Me., a hailstorm began at 4.51 p. m. and lasted 5 minutes. The hailstones varied in size from $\frac{1}{4}$ to $1\frac{1}{2}$ inch in diameter. The centers of the stones were opaque while the outer rings were of transparent ice. The damage to window glass by hail was \$3,000 to \$5,000. The temperature fell from 76° to 64°. A terrific thunderstorm, with heavy rain, occurred at Eastport from 6.28 to 6.50 p. m.

At East Hampden, Me., a heavy thunderstorm moved northeast at 5.30 p. m. At Topsham, Me., a thunder, rain, and hail storm moved east at 5.30 p. m., damaging property to the value of about \$2,000. At Portland, Me., thunder and rain occurred at intervals in the evening. The storm apparently passed to Biddeford and Saco, where considerable damage was caused. The storm reached Saco at 5.30 p. m. At Bangor, Me., a thunderstorm, with heavy rain and small hail, moved northeast at 5.20 p. m.; 2 persons were reported killed and small buildings were blown down. At Calais, Me., a thunderstorm, with rain and hail, prevailed from 5 to 7 p. m.; several persons were injured and glass on north and east sides of buildings was broken.

At Old Town, Me., barns and chimneys were blown down during a thunderstorm which moved southeast at 5.30 p. m. At Bowdoinham, Me., a hailstorm moved southeast at 5 p. m. A heavy thunder and rain storm moved east-southeast over Brewer, Me., at 5.30 p. m. At Lisbon Falls, Me., a storm moved east at 5 p. m.; loss of glass by hail was reported. At Orono, Me., a severe thunderstorm, with high wind, prevailed from 5.16 to 5.30 p. m. At Hanover, N. H., great damage to trees and buildings was caused by high winds.

At Manchester, N. H., a thunderstorm began at 4.45 p. m.;

at 5.35 p. m. the storm increased in violence and the wind shifted suddenly from southwest to west and reached a velocity of 28 miles per hour; light hail fell for 10 minutes; the temperature fell from 94° to 67°; damage was caused by high wind and lightning. At Antrim, N. H., 2 barns and a bridge were blown down. At Cornwall, Vt., a storm unroofed buildings and caused other damage in a path about one mile in width. At Montpelier, Vt., a violent hailstorm moved southeast in a path about 400 feet in width at 2.50 p. m.

At Princeton, Mass., a church was struck by lightning and burned. At Fitchburg, Mass., lightning struck in 5 places. At Greenfield, Mass., a heavy thunderstorm occurred at 5.15 p. m. Hail 2 to 2½ inches in diameter fell for 3 minutes; 8 persons were reported killed, and property was damaged to the value of about \$15,000. Damage was caused by hail at Royalston, Mass. Damage by hail was reported in Schoharie county, N. Y. A destructive hailstorm was reported at Binghamton, N. Y. Damage was caused to grain and fruit by hail about Waverly, N. Y.

A thunderstorm prevailed at New Brunswick, N. J., from 8 to 9 p. m.; 2 barns were struck by lightning, and several horses were killed. During a thunderstorm at Columbus, Ohio, the wind reached a velocity of 40 miles per hour from the west from 3.05 to 3.25 p. m.; the temperature fell from 87° to 65°. A violent thunderstorm was reported near Newark, Ohio, in the afternoon. At Standwood, Mich., a building was struck by lightning and burned.

A severe thunderstorm was reported at Miller, S. Dak. At Helena, Mont., a thunderstorm, with heavy rain, occurred in the evening; streets were flooded and railroad tracks were washed out. At North Platte, Nebr., a gale from the south began at 9.15 p. m. and continued to 1.20 a. m., 15th; the wind reached a velocity of 60 miles per hour. At Pueblo, Colo., high south winds in the afternoon caused some damage to trees, etc.

15th.—A tornado was reported 5 miles south of New Richland, Minn., at 5.30 p. m. The storm moved east in a path about 40 rods in width, with thunder and lightning, and heavy rain after. Hail fell outside of the track. Clouds came together from opposite directions, assumed a whirling motion, and descended. Two persons were killed, and 20 buildings were destroyed. At Spring Valley, Minn., an unusually severe rain and thunder storm moved east at 7 p. m.; 2 buildings were struck by lightning, and damage to the extent of about \$50,000 was caused by flood. At Linden, Minn., one person was killed by lightning.

At Easton, Minn., a destructive storm moved east in a path one-eighth to one-fourth mile in width at 4.30 p. m.; 14 persons were reported killed, and property was damaged to the extent of \$15,000. Near Minnesota Lake, Minn., a tornado moved east in a path about 80 rods in width at 5 p. m.; heavy rain and thunder and large hail were reported; heavy timbers were carried 2 and 3 miles; debris was thrown in all directions; trees were generally thrown west; 4 persons were killed, and the damage to property was estimated at \$16,000. Near Winnebago City, Minn., a destructive storm moved east at 5 p. m.; large hail fell, and several buildings were destroyed.

At Wells, Minn., a tornado moved east between 4 and 5 p. m., with heavy thunder and lightning, light rain before, heavy rain after, and large hail; buildings and trees were destroyed in a path 20 to 30 rods in width; 2 persons were killed, and the damage to property was about \$20,000. Near Fairmount, Minn., a tornado moved northeast in a path about 10 rods in width at 3.30 p. m.; large hail was reported; heavy rain fell after; 2 persons were killed, and the damage to property in Martin county was placed at \$20,000. A heavy thunderstorm moved northeast near Albert Lea, Minn., at 6 p. m.; 2 persons were killed.

At Hartland, Minn., a thunderstorm, with hail, and heavy rain after, moved east at 5.30 p. m.; one person was killed, and houses and trees were destroyed. At Freeborn, Minn., a tornado, with hail, heavy rain, and sharp lightning, moved east

in a path about 80 rods in width at 5 p. m.; articles were thrown toward the center of the path; one person was killed, and the damage to buildings was estimated at \$10,000. Near Blooming Prairie, Minn., a tornado moved east in a path 20 rods in width at 6 p. m., with heavy thunder and lightning, hail, and heavy rain; buildings were moved northeast, northwest, and east; several persons were injured, and heavy articles were carried long distances. At Jackson, Minn., a hailstorm moved east at 3 p. m.

At Saint Paul, Minn., 1.00 inch of rain fell in 10 minutes, commencing at 11.36 p. m. At Nashville Center, Minn., a thunderstorm, with funnel-shaped cloud, caused damage to the extent of \$2,000 to \$3,000. Near Sherburne, Minn., a storm moved east at 3 p. m., destroying buildings and injuring a number of people. A severe thunderstorm moved east over Viroqua, Wis., at night; a barn was struck by lightning. High winds moved barns from their foundations at Hillsborough, Wis. Heavy rain washed out railroad tracks in various parts of Wisconsin. At Eau Claire, Wis., a man was killed by lightning. A heavy rain and thunder storm from the southwest occurred about noon at Cresco, Iowa; damage was caused by washouts.

A destructive storm, with heavy hail, visited Kennedy, Nebr., at 5.30 p. m.; one building was destroyed; crops were beaten down, and damage was caused by heavy rain. Damage was caused by heavy wind at Kearney, Nebr., at night. Fruit and young trees were damaged by hail at Morton, Kans. At Dodge City, Kans., a thunderstorm, with heavy rain, began at 10.50 p. m. and ended at 3.15 a. m., 16th, with light hail for 5 minutes; 0.70 inch of rain fell in 10 minutes; streets were flooded; a house was struck and one man was stunned by lightning. Acampo, Cal., was visited by a severe thunderstorm in the early morning.

16th.—At Canaseraga, N. Y., buildings and trees were blown down, and 2 houses were struck by lightning. A heavy thunder and rain storm was reported about Malone, N. Y. An unusually severe thunder and rain storm occurred at North Hammond, N. Y. At Romulus, N. Y., a barn was struck by lightning, grain was damaged, and outbuildings were unroofed and blown down. At Gilboa, N. Y., a hailstorm moved east at 4 p. m. A cloudburst was reported in the evening at Scranton, Pa.; several buildings were struck by lightning. A house was struck by lightning at State College, Pa.

A heavy rain and hail storm was reported in the afternoon at Eagles Mere, Pa. A heavy wind and rain storm occurred at Gratiot, Ohio, in the evening. One person was reported killed by lightning at Youngstown, Ohio. A thunderstorm, with heavy rain, occurred about noon at Red Wing, Minn.; washouts occurred on railroads, and crops were injured. At Memphis, Tenn., a severe thunderstorm occurred in the evening; the wind reached a velocity of 47 miles per hour, and the temperature fell from 97° to 69°. At Harvey, Wis., a barn was struck and a man was fatally injured by lightning. Two persons were reported killed by lightning near Racine, Wis. Considerable damage to timber and buildings was caused by a storm at Amherst, Wis.

Thunderstorms prevailed about Dubuque, Iowa; a barn was struck by lightning and 4 men were injured; heavy rain damaged crops and flooded lowlands. Ottumwa, Iowa, was visited in the early morning by a heavy wind and hail storm; damage was caused by water, and a number of persons were shocked by lightning. Lightning struck in several places at Blockton, Iowa. At Pueblo, Colo., a thunderstorm, with heavy rain and hail, began 10.45 p. m.; several buildings were struck by lightning; hail damaged gardens, and washouts occurred on the railroads.

17th.—A heavy thunder and rain storm occurred in the afternoon at Portland, Me. At Manchester, N. H., a thunderstorm began 12.10 p. m., with rain and light hail; several houses were struck by lightning; the temperature fell from 91° to 66°. At Boston, Mass., a thunderstorm began 3 p. m. and

ended 5.15 p. m.; heavy rain fell; the wind reached a velocity of 37 miles per hour from the northwest; small snow flakes were noticed during the heaviest of the rain; property was damaged by lightning and rain. A house was struck by lightning at Taunton, Mass. A heavy thunder and hail storm was reported in the afternoon at Nyack, N. Y. Lightning struck in several places in New York, N. Y.

Lightning caused some damage at points in New Jersey. A severe storm was reported at York, Pa. At Carlisle, Pa., a heavy rain, hail, and thunder storm moved east-southeast at 5 p. m. A house was struck by lightning at Tampa, Fla. A violent thunderstorm visited Ottawa, Ill., about 5 p. m. One person was reported killed by lightning at La Fayette, Ind. A child was killed by lightning near Russellville, Mo. A severe rainstorm prevailed about Columbus, Kans. At Abilene, Tex., a thunderstorm from the northwest prevailed from 7 to 11 p. m.; the wind reached a velocity of 42 miles per hour from the northwest, and the temperature fell from 88° to 60°.

18th.—A heavy rain, hail, and wind storm visited Rocky Mount, N. C., in the evening. High wind in the evening caused damage at Memphis and Livingston, Ala. Thunderstorms were general over northern Ohio. At Oberlin, Ohio, a barn was struck by lightning and burned. Timber was destroyed at Wauseon, Ohio. One person was reported killed by lightning at Upper Sandusky, Ohio. A thunderstorm, with heavy showers, passed over Springfield, Ill., in the evening; a church was struck by lightning. A man was reported killed by lightning near Dallas, Tex.

19th.—Some damage was caused at Le Roy, Pa., by a heavy wind and thunder storm. Severe storms were reported in the interior of Pennsylvania at night. Hessville, Ohio, was visited by a destructive storm in the afternoon. A building was struck by lightning at Parmleysville, Ky. Heavy rain caused washouts about Hendersonville, Tenn. Two children were reported killed near Fort Dodge, Iowa. A destructive thunderstorm visited Alta, Iowa, in the afternoon; a building valued at \$10,000 was struck by lightning and burned. Hail damaged crops about Arkalon, Kans.

20th.—At Point Peter, Ga., a barn was struck by lightning and burned. A man was struck by lightning at Chattanooga, Tenn. A severe thunderstorm visited Red Wing, Minn., in the evening, causing damage to buildings and crops in the surrounding country. A severe storm occurred in the afternoon near Mauley, Minn.; 2 persons were reported killed, and buildings were destroyed. A storm with funnel-shaped cloud, moving from the west, was reported at Ocheyedan, Iowa, about 5 p. m.; the storm was attended by thunder, lightning, and hail; 10 buildings were wrecked, trees were scattered in all directions, and pieces of timber were driven into the ground. A heavy rainstorm, with some lightning, moved east over Sibley, Iowa, at 4.45 p. m., causing damage to buildings to the extent of about \$1,000. At Alta, Iowa, thunderstorms occurred at intervals during the night.

21st.—A man was killed by lightning near Homer, Ga. One person was reported killed by lightning near Knoxville, Ga. At Lincoln, Ill., a thunderstorm, with exceptionally heavy rain, occurred in the evening; 3 persons were killed by lightning, and property was damaged by flood. A thunderstorm, with very heavy rain, was reported in Hamilton county, Iowa, in the morning. A violent storm from the southwest began at Alpena, Mich., at 12.10 p. m.; at 12.41 p. m. the wind reached an extreme velocity of 78 miles per hour; hail fell for 2 minutes, the stones averaging $\frac{5}{8}$ inch in length and $\frac{1}{2}$ inch in thickness; sidewalks were covered by hail to a depth of 3 inches; the temperature fell from 84° to 56°; the average width of the storm's path was about $\frac{1}{2}$ mile, and its length was about $1\frac{1}{2}$ mile; trees were uprooted, buildings unroofed, and window glass $\frac{1}{4}$ inch in thickness was broken by hail; the damage to property was estimated at \$4,000.

A severe storm passed southeast over Brule, Aurora, and Douglas counties, S. Dak., on the 21st–22d, wrecking a number

of buildings and injuring several persons near Grand View. A violent thunderstorm, with heavy rain, occurred in the afternoon at Conway, Ark. A cloudburst, with thunder, lightning, and light hail, was reported south of Lonoke, Ark. Heavy rain fell at intervals at Chattanooga, Tenn.; streets were flooded, and some damage was caused by lightning.

22d.—A heavy thunder and rain storm moved east over Perry, N. Y., at 1 a. m. Buildings were struck and several persons were stunned by lightning in Maryland. A thunderstorm moved northeast over Dauphin Park, Ill., at 1 p. m.; several insecure buildings were blown down or damaged. 2 horses were killed by lightning at Martinsville, Ill. A house was struck and one person was killed by lightning at Kingston Springs, Tenn. Light thunderstorms developed over west-central Ohio, attended in places by hail and heavy rain.

A heavy rain and thunder storm moved south of east over Oelwein, Iowa, at 6 p. m.; several barns were blown down, and groves of large trees were prostrated. A thunderstorm, with high wind, moved northeast over Red Wing, Minn., in the morning. A severe thunderstorm occurred at Milwaukee, Wis., from 8 to 9 p. m.; several buildings were struck by lightning. A heavy thunder, rain, and hail storm moved east over Platteville, Wis., at 7 p. m. A severe thunderstorm visited Pierre, S. Dak., at 3 a. m. At 1.45 p. m. a thunderstorm, with rain and hail, moved northeast over Plankinton, S. Dak., damaging buildings to the extent of about \$6,000.

Buildings were damaged by a storm that visited Kimball, S. Dak., at 2 a. m. Heavy thunderstorms were noted at Dubuque, Iowa. A destructive storm of thunder, heavy rain, and hail moved southeast near Fredericksburgh, Iowa, at 5 p. m.; 2 persons were reported killed, and great damage was caused to timber. A severe thunder and rain storm moved southeast near Sumner, Iowa, at 6 p. m.; 3 persons were reported killed. Damage was caused by heavy rain about Cresco, Iowa. A man was killed by lightning near Wallace, N. Mex.

23d.—A house was struck by lightning at Worcester, Mass. At Kingston, N. J., a barn was struck by lightning and burned. At Wooster, Ohio, 4 houses were struck by lightning. A heavy thunderstorm visited Toledo, Ohio, in the early morning. Two houses were struck by lightning at Norwalk, Ohio. A severe thunderstorm visited Hammond, Ind., in the evening. Severe storms prevailed throughout northern Illinois. At Chicago, Ill., a thunderstorm, with excessive precipitation, occurred late in the afternoon. A man was reported killed by lightning near Kalamazoo, Mich. Two persons were reported killed by lightning at Mottville, Mich. A heavy rain, thunder, and hail storm visited Dubuque, Iowa, in the early morning, causing considerable damage to property. A severe storm also occurred at Dubuque in the afternoon, attended by heavy rain, which caused considerable damage. A heavy thunder and rain storm prevailed at Davenport, Iowa, during the afternoon and night; much damage was caused by heavy rain. A heavy rainstorm visited San Antonio, Tex., in the afternoon. Crops about Homer, La., were damaged by heavy rain.

24th.—A severe thunder and wind storm visited Wilmington, N. C., in the afternoon. An exceptionally heavy thunderstorm occurred at Louisville, Ky., in the evening; lightning struck in many places. At Shelbyville, Ky., a house was struck and stock was killed by lightning. A thunderstorm, with heavy rain, visited Palestine, Tex., in the morning; 4.46 inches of rain fell in less than 3 hours, causing damage by washouts. A moderate thunderstorm and a cloudburst occurred in the mountains west of Fort Stanton, N. Mex., during the afternoon and evening.

25th.—In the early morning a house was struck by lightning at Manchester, N. H. A destructive thunder, rain, and hail storm occurred at Weldon, N. C., in the afternoon; one man was killed and 3 were stunned by lightning, and hail damaged crops. A severe thunderstorm, with light rain and small hail, visited Covington, Ga., at 4 p. m.; the path of the

storm was about 100 feet in width; houses and trees were blown down.

26th.—Crops and trees were injured by a heavy wind and thunderstorm at Washington, N. C. During a thunderstorm at night at Cairo, Ill., the wind reached an extreme velocity of 60 miles per hour; large trees were blown down or broken off. Streets were flooded at Dubuque, Iowa, during a heavy rain and thunder storm in the afternoon. A revolving storm swept over the south part of Fayette, Iowa, at 3 p. m., causing considerable damage to buildings and trees. The storm moved from the west in a path 15 rods in width; trees were twisted off and thrown in different directions; a roaring sound was heard; the storm was attended by thunder and light rain. Crops were damaged by hail near Clinton, Mo. A destructive storm occurred near Buncheon, Mo.; large hail fell; damage to crops and property estimated at over \$200,000. Crops were injured by hail at East Lynne, Mo. A heavy thunder, rain, and hail storm moved southeast over Auvergne, Ark. A horse was killed by lightning near Kiowa, Kans.

27th.—Very heavy rain fell at North Conway, N. H., at night. At Oswego, N. Y., a thunderstorm prevailed in the afternoon. At Fruit Valley, about 4 miles west of Oswego, a tornado of slight intensity occurred about 4 p. m.; 2 low-hanging clouds, having a rapid movement, seemed to unite. The whirl first prostrated about 20 pear trees, then passed about one-half mile and destroyed a number of apple trees, and thence northeastward, blowing down some trees. Some damage was caused by lightning in the afternoon at Rochester, N. Y. At Canaseraga, N. Y., a violent storm prevailed from 1.15 to 3.45 p. m.; trees were twisted off and buildings were blown down; a barn was struck by lightning and burned.

Heavy rain and high wind caused considerable damage about Humphrey, N. Y. At Palermo, N. Y., 2.00 inches of rain fell in 30 minutes. At Fleming, N. Y., the storm commenced at 5.20 p. m.; 2 horses were killed by lightning, and damage was caused to buildings by wind. At South Canisteo, N. Y., hail damaged crops and fruit. At Erie, Pa., a thunderstorm commenced at 10.30 a. m. and ended at 2.45 p. m. At West Chester, Pa., a storm caused minor damage at 7 p. m. A destructive storm was reported in the southern part of Centre county, Pa., in the afternoon. Streets were flooded and houses were struck by lightning at Reading, Pa. A storm caused great damage in Chester county, Pa.

Exceptionally heavy rain, with thunder and lightning, was noted in the morning at York, Pa. At Williamsport, Pa., a thunderstorm moved north of east at 6 p. m. Hailstorms caused much damage in Crawford, Lebanon, and Adams counties, Pa. A destructive hailstorm occurred near Baltimore, Md., between 6 and 7 a. m. A severe thunder and wind storm visited Baltimore, Md., between 4 and 8 p. m.; streets were flooded, and much damage was caused to sewers, streets, and unfinished buildings. Late in the afternoon a destructive thunderstorm visited Burlington county, N. J.; one man was killed by lightning, and crops and property were damaged by heavy rain. Two men were killed by lightning at Salem, Va., and one boy was killed and another shocked by lightning at Louisa C. H., Va.

A severe thunderstorm visited Martinsburgh, W. Va., in the afternoon; one man was killed by lightning. At Wilmington, N. C., high southwest winds prevailed in the evening and night, an extreme velocity of 55 miles per hour being noted at 4.30 a. m., 28th; very heavy rain and some hail fell;

trees were uprooted and crops damaged. A heavy thunderstorm visited Nashville, Tenn., in the early morning. Damage was caused by storm about Andersonville and Greenville, Tenn. High west winds prevailed at Grand Haven, Mich., in the afternoon. At Port Huron, Mich., a barn was struck by lightning. Near Webster, S. Dak., 3 persons were killed by lightning. A heavy hailstorm caused some damage near Westington Springs, S. Dak.

28th.—At Southport, N. C., a heavy southwest squall lasting 10 minutes began 10 a. m.; the wind reached an extreme velocity of 60 miles per hour, causing minor damage. A thunderstorm, with high wind, heavy rain, and hail, caused damage to crops about Marksville, La., in the afternoon. Several houses were unroofed by high wind at Bisbee, Ariz.

29th.—A severe thunder and hail storm at night was reported at Pottsville, Pa. Severe thunderstorms were reported at night in Otsego and Fulton counties, N. Y. A thunderstorm, with hail and exceptionally heavy rain, caused damage to crops and roads about Dadeville, Mo. At Neosho, Mo., a house was struck by lightning and trees were prostrated by high wind. In the evening damage was caused by high wind at Lead Hill, Ark. At Leon, Kans., a man was killed by lightning. A severe wind and hail storm was reported near Columbus, Kans.

30th.—A heavy rain and hail storm was reported at Bakersville, Conn. At Torrington, Conn., a thunder, rain, and hail storm moved north-northeast at 2.40 p. m. At Winsted, Conn., a severe thunderstorm moved north at 3 p. m. A house was struck by lightning at Royalston, Mass. A thunderstorm of unusual severity visited Poughkeepsie, N. Y., in the afternoon. Fields were destroyed and grain was injured by heavy rain about North Hammond, N. Y. A thunder squall of unusual severity moving northeast in a path 250 yards in width visited Gloucester, N. J., at 1.15 p. m., with heavy rain after, and some thunder and lightning. Two storm clouds appeared moving from the southwest, and another advanced from the northwest. The 3 clouds met on the river 200 yards from the New Jersey shore and moved eastward, rolling like a ball. The storm struck a pavillion and carried the roof in the air, where it divided, one part flying north, and a larger part south. The clouds dipped and drew water from the river; 2 persons were killed and 3 injured.

A thunderstorm in the afternoon caused some damage at Moorestown, N. J. At Philadelphia, Pa., a thunderstorm moving rapidly from the southwest began at 1 p. m., and rain continued until 2.05 p. m. High southwest, shifting to northwest, winds attained a velocity of 32 miles per hour; the temperature fell from 87° to 66°; the barometric fluctuations were marked; and damage was caused by lightning. At Baltimore, Md., a severe thunderstorm from the southwest, with high wind, hail, and rain, began 11.55 a. m.; the temperature fell from 81° to 67°; much damage was caused in the city.

Heavy hail occurred in Prince Georges county, Md. High wind and heavy rain were reported in the afternoon at Solomons, Md. At Salisbury, Md., a heavy thunder, rain, and hail storm moved east at 4 p. m. Trees were prostrated by heavy wind at Nuttallburgh, W. Va. At Chattanooga, Tenn., a thunderstorm began about 3 p. m. and continued at intervals until midnight; damage was caused by high wind. At Oklahoma City, Okla., the wind veered to northwest at 12.30 a. m. in a heavy squall, with thunder, lightning, and hail, causing some destruction to property and crops in that section.

INLAND NAVIGATION.

FLOODS.

The month opened with the Mississippi River above the danger-line from Saint Louis, Mo., to the Gulf, and at Dubuque, Iowa. At Shreveport, La., the Red River was 5.2 feet above the danger-line. At Dubuque, Iowa, the river was ris-

ing and a number of mills were compelled to suspend operations. At Keokuk, Iowa, the river was rising rapidly and passed the danger-line in the evening, submerging railroad tracks and bottom lands. At Saint Louis, Mo., the river was 2.3 feet above the danger-line and rising. Heavy rains caused streams